Bulletin 476 November, 1943

COMMERCIAL FERTILIZERS

REPORT FOR 1943

E. M. Bailey
Chemist in Charge

Connecticut
Agricultural Experiment Station
New Haven

"Printed under authority of Section 142,
General Statutes of Connecticut,
Revision of 1930,
as amended by Section 45e, Supplement of 1939.

Fred R. Zeller,
State Comptroller"

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Commercial Fertilizers Report for 1943

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LAW AND REGULATIONS REGARDING COMMERCIAL FERTILIZERS

The term "commercial fertilizers" as used in the Connecticut fertilizer statute includes any and every substance imported, manufactured, prepared or sold for fertilizing or manuring or soil amendment purposes, except barnyard manure and stable manure that have not been artificially treated or manipulated, marl and lime.

The seller is responsible for the proper labelling of each package of fertilizer, for the registration of each brand sold or offered for sale, for the payment of the required analysis fee and for the payment of the tonnage tax. If, however, proper labelling, registration and payments of analysis fees and of tonnage tax have been provided for by the manufacturer or by another responsible person, all sellers of such brands are released from the above-mentioned requirements. The retailer, therefore, should assure himself that the requirements of the law have been met by the manufacturer of the brands which he handles, or himself be prepared to meet all these requirements.

It frequently happens that a manufacturer or jobber sells fertilizer materials which are the products of, and which are registered by, another firm or individual. Distributors in such cases should sell such materials by the exact brand names under which they are registered in order that there may be no mistake as to the identity of brands. Any change in the brand names, or failure to make the identity of the brand and its manufacturer clear, makes the distributor liable for the registration of the product as his own brand.

The law exempts from registration, and from other requirements referred to, only (1) fertilizers passing through the State in transit; (2) fertilizers and fertilizer materials shipped to regular fertilizer factories to be used for manufacturing purposes and (3) fertilizers and fertilizer chemicals sold to the Connecticut Agricultural Experiment Station for experimental purposes.

Cottonseed, linseed and soybean meals, when sold or used for fertilizer purposes, must be registered as fertilizers and the specified fees paid thereon. For such products the registration fee is $10.00 for each brand payable annually, and six cents per ton tonnage fee, payable semi-annually.

These fees are entirely apart from those required by the feeding stuffs statute.

Note: Analyses reported in this bulletin were made by Messrs. Nolan, Merwin and Walden; microscopic examinations by Miss Shepard; inspection and sampling by Mr. Stickney and compilations by Mrs. Vosburgh.

Because manufacturers or jobbers do not know how much, if any, of their brands are sold or used as fertilizers, local dealers and purchasers report their sales or purchases to this Station. The information is not for publication but is used to inform manufacturers of the total sales of their brands as fertilizer in this State. It is expected that the fees provided for by statute will be paid by the manufacturer or other party responsible for the brands.

REGISTRATIONS

Late registrations for 1942

To the brands registered for 1942 in our last report should be added:

Independent Mfg. Co., Philadelphia, Pa.
Independent's Bone Meal

National Lead Co., Atlantic Branch, 111 Broadway, New York, N. Y.
Dutch Boy 32% O. P. Linseed Oil Meal

Registrations for 1943

For 1943, 45 firms and individuals registered 216 brands of fertilizers at this Station for sale in the State. As required by statute, the brands are listed as follows:

The Acme Guano Co., Baltimore, Md.
Acme Victory Garden 3–8–7
Acme 3–12–6
Acme 4–9–7
Acme 4–10–10
Acme 4–12–4

Ted Alkire, Lubbock, Tex.
Kireal Cotton Hull Ash

Allied Chemical & Dye Corp., 40 Rector St., New York, N. Y.
Arcadian, The American Nitrate of Soda
Arcadian Sulphate of Ammonia
Sulphate of Ammonia

The American Agricultural Chemical Co., North Weymouth, Mass.
AA Market Garden Fertilizer 4–12–4
AA Potato and Root Crop Fertilizer 4–10–10
AA Potato and Vegetable Fertilizer 4-9–7
AA Sure Crop Fertilizer 3–12–6
Agrico Alkaline 0–14–14
Agrico for Commercial Growers 4–12–4
Agrico for Corn 3–10–6[1]
Agrico for Corn 3–12–6
Agrico for Lawns, Trees and Shrubs 3–10–5[1]
Agrico for New England 4–9–7
Agrico for Potatoes and Vegetables 4–10–10
Agrico for Seeding Down 4–16–20
Agrico for Tobacco 6–3–6
Agrico for Truck 4–12–4
Agrico Victory Garden Fertilizer "For Food Production Only" 3–8–7
Fine Ground Bone
Muriate of Potash—50% Potash
18% Normal Superphosphate
Pulverized Sheep & Goat Manure

American Cyanamid Co., 30 Rockefeller Plaza, New York, N. Y.
20.6% "Aero" Cyanamid Granular
21.0% "Aero" Cyanamid Pulverized

American Potash & Chemical Corp., 70 Pine St., New York, N. Y.
Trona 60% Muriate of Potash

Apothecaries Hall Co., Waterbury, Conn.
Bone Meal 2.25%
Castor Pomace
Cotton Hull Ashes—unit basis
Dry Ground Fish
Liberty 0–14–14
Liberty Fertilizer 3–12–6
Liberty Fertilizer 4–9–7
Liberty Fertilizer 4–10–10
Liberty Fertilizer 4–12–4
Liberty Tobacco Mixture 5–3–5
Liberty Tobacco Mixture 6–3–6
Liberty Victory Fertilizer 3–8–7
Muriate Potash 50%
Muriate Potash 60%
Sheep Manure
Sulphate Ammonia
Sulphate Potash
Superphosphate 20%

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[1] Sold in accordance with government regulations.

Archer-Daniels-Midland Co., Minneapolis, Minn.
Archer Brand 34% Protein Old Process Linseed Oil Meal
Archer Brand 44% Protein Soybean Oil Meal

Armour Fertilizer Works, 120 Broadway, New York, N. Y.
Armour's Big Crop Fertilizer 3–12–6
Armour's Big Crop Fertilizer 4–9–7
Armour's Big Crop Fertilizer 4–10–10
Armour's Big Crop Fertilizer 4–12–4
Armour's Big Crop Fertilizer 6–15–15
Armour's Big Crop Superphosphate 20%
Armour's Big Crop Tobacco Special 5–3–5
Armour's Big Crop Tobacco Special 6–3–6
Armour's Bone Meal Fertilizer
Armour's Victory Garden Fertilizer 3–8–7[1]

Ashcraft-Wilkinson Co., Atlanta, Ga.
Cow-Eta Brand Prime 41% Protein Cottonseed Meal
Fertilizer Compound 34%

Associated Seed Growers, Inc., New Haven, Conn.
Clark's Tip Top Brand Fertilizer 4–9–7

Atkins & Durbrow, Inc., 165 John St., New York, N. Y.
Driconure 2–1–1

F. A. Bartlett Tree Expert Co., Stamford, Conn.
Bartlett Green Tree Food 4–8–6

The Baugh & Sons Co., 25 South Calvert St., Baltimore, Md.
Baugh's 3–10–10
Baugh's 4–9–7
Baugh's 4–10–10
Baugh's Perfection Brand 3–12–6
Baugh's Victory Garden Fertilizer for Food Production Only 3–8–7
Baughs 20% Superphosphate

Berkshire Chemical Co., Bridgeport, Conn.
Berkshire 0–14–14
Berkshire Victory Garden 3–8–7
Berkshire 3–12–6 Fertilizer
Berkshire 4–9–7 Fertilizer
Berkshire 4–10–10 Fertilizer
Berkshire 4–12–4 Fertilizer
Berkshire 6–3–6 Fertilizer
Fine Ground Bone Meal
Pure Raw Bone
Sheep Manure

The Buckeye Cotton Oil Co., Cincinnati, Ohio
Buckeye 44% Soybean Oil Meal

Chilean Nitrate Sales Corp., 120 Broadway, New York, N. Y.
Chilean Nitrate of Soda—Champion Brand
Chilean Nitrate of Soda—Original Old Style

Consolidated Rendering Co., 178 Atlantic Ave., Boston, Mass.
Corenco 3–8–7 Victory Garden Fertilizer
Corenco 3–10–3 Landscape[2]
Corenco 3–12–6 Animal Brand
Corenco 4–9–7 General Crop Manure
Corenco 4–10–10 Potato Grower
Corenco 4–12–4 Complete Manure
Corenco 6–3–6 Special Tobacco Grower
Corenco Ground Bone
Corenco Sheep Manure
Superphosphate 20%

The Davison Chemical Corp., Baltimore, Md.
Davco Granulated 20% Superphosphate

E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del.
"Uramon" Fertilizer Compound

Eastern States Farmers' Exchange, West Springfield, Mass.
Eastern States 0–9–27
Eastern States 0–14–14[3]
Eastern States 3–8–7
Eastern States 3–12–6[4]
Eastern States 4–10–10
Eastern States 4–16–20
Eastern States 5–10–10
Eastern States 5–17–0
Eastern States 6-12–6
Eastern States 6–15–15
Eastern States 6–15–15 Low Chlorine
Eastern States 8–4–8[5]
Eastern States 8–8–8
Eastern States Castor Pomace
Eastern States Ground Steamed Bone
Eastern States Muriate of Potash
Eastern States Sulphate of Ammonia
Eastern States Sulphate of Potash
Eastern States Superphosphate 20%
Eastern States Superphosphate 47%

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[1] Substituted for "Armour's Big Crop Fertilizer 3–10–10".
[2] Nitrogen all organic.
[3] Substituted for 0–20–20.
[4] Substituted for 5–20–10.
[5] Substituted for 6–3–6 Tobacco.

Goulard & Olena, Inc., 140 Liberty St., New York, N. Y.
G & O Lawn and Garden Fertilizer 4–12–4

A. H. Hoffman, Inc., Landisville, Pa.
Hoffman's Bone Meal
Hoffman's Cow Manure
Hoffman's Sheep Manure

Humphreys-Godwin Co., Memphis, Tenn.
Dixie Brand 41% Prime Cottonseed Meal

Independent Mfg. Co., Philadelphia, Pa.
Independent's Bone Meal

Spencer Kellogg & Sons, Inc., Buffalo, N. Y.
Castor Pomace

L. B. Lovitt & Co., Memphis, Tenn.
"Lovit Brand" 41% Protein Cottonseed Meal

Mechling Bros. Chemicals, Div. of General Chemical Co., 12 South Twelfth St., Philadelphia, Pa.
Veget-Aid 5–10–5

Norwood Brand Fertilizer Co., North Reading, Mass.
Norwood Brand Sheep Manure

Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.
Old Deerfield 4–9–7
Old Deerfield 4–10–10
Old Deerfield 6–3–6
Old Deerfield Castor Pomace
Old Deerfield Cotton Hull Ashes, 30%
Old Deerfield Double Sulfate of Potash Magnesia

Olds & Whipple, Inc., Hartford, Conn.
Muriate of Potash
O & W 0–14–14 Fertilizer
O & W 0–20–20 Fertilizer
O & W 3–8–7 Victory Garden Fertilizer
O & W 3–12–6 Corn Fertilizer
O & W 4–9–7 General Purpose Fertilizer
O & W 4–9–7 General Purpose Fertilizer with Sulphate of Potash
O & W 4–10–10 Potato Fertilizer
O & W 4–10–10 Potato Fertilizer with Sulphate of Potash
O & W 4–12–4 Market Garden Fertilizer
O & W 5–3–5 Complete Tobacco Fertilizer
O & W 5–3–5 Complete Tobacco Fertilizer Potash Derived From Cotton Hull Ash
O & W 6–3–6 Blue Label Tobacco Fertilizer
O & W 6–3–6 Blue Label Tobacco Fertilizer Potash Derived From Cotton Hull Ash
O & W 6–15–15 Fertilizer
O & W Bone Meal
O & W Cotton Hull Ash
O & W Sulphate of Ammonia
O & W Sulphate of Potash
O & W Superphosphate 20%

Pittsburgh Plate Glass Co., 2-10 Chester Ave., Newark, N. J.
Red Wing 34% Protein Old Process Linseed Meal

The Pulverized Manure Co., 503 Exchange Bldg., Union Stock Yards, Chicago, Ill.
Wizard Brand Cow Manure
Wizard Brand Pulverized Sheep Manure

The Rogers & Hubbard Co., Portland, Conn.
Gro-Fast Plant Food[1]
Hubbard All Soils Fertilizer 4–12–4
Hubbard Castor Pomace
Hubbard Climax Tobacco Fertilizer 5–3–5
Hubbard Corn and Grain Fertilizer 3–12–6
Hubbard Cotton Hull Ash
Hubbard Cow Manure
Hubbard Domestic Sheep Manure
Hubbard Dry Ground Fish Meal
Hubbard Fine Ground Bone
Hubbard High Potash Fertilizer 4–10–10
Hubbard Muriate of Potash
Hubbard Potato Fertilizer 4–9–7
Hubbard Raw Knuckle Bone Flour
Hubbard Strictly Pure Bone
Hubbard 20% Superphosphate
Hubbard Tobacco Grower 6–3–6
Red H Brand 3–12–6
Red H Brand 4–9–7
Red H Brand 4–10–10
Red H Brand 4–12–4
Victory Garden Fertilizer 3-8–7

Ruhm Phosphate & Chemical Co., Mount Pleasant, Tenn.
Red Seal Brand Ruhm's Phosphate Rock 30%

O. M. Scott & Sons Co., Marysville, Ohio
Scott's Turf Builder 6–8–4[1]

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[1] Nitrogen all organic.

Scott's Turf Builder 8-7-3[1]
Scott's Victory Garden Fertilizer 3-8-7

Sears, Roebuck & Co., Chicago, Ill.

Garden Master Plant Food 3-8-7

Sewerage Commission of the City of Milwaukee, Milwaukee, Wis.

Milorganite

M. L. Shoemaker, Div. Wilson & Co., Inc., Philadelphia, Pa.

Shoemaker's "Swift-Sure" 4-10-10
Shoemaker's "Swift-Sure" Victory Garden Fertilizer 3-8-7

Stumpp & Walter Co., 132 Church St., New York, N. Y.

Sawco Bone Fertilizer 2.47-24.00
Sawco Emerald Grass Fertilizer 3-10-2[2]
Sawco General Garden Fertilizer 3-8-5[2]
Sawco Pulverized Sheep Manure 2-1-2
Sawconure 2-1-1
Victory Garden Fertilizer 3-8-7

Swift & Co. Fertilizer Works, Baltimore, Md.

Bone Meal Fertilizer 2.47-23.0
Swift's Red Steer 3-12-6
Swift's Red Steer 4-9-7
Swift's Red Steer 4-10-10
Swift's Red Steer Superphosphate 20%
Swift's Sheep Manure 2-1-2
Vigoro 3-8-7
Vigoro 3-12-6
Vigoro 4-12-4

Tennessee Corp., Lockland, Ohio

Loma 4-12-4
Victory Garden Fertilizer 3-8-7

I. P. Thomas & Son Co., 721 Market St., Camden, N. J.

I. P. Thomas 4-9-7
Soil-Rich Victory Garden Fertilizer 3-8-7 (For Food Production Only)
20% Superphosphate
Tip Top Fertilizer 3-12-6

Walker-Gordon Laboratory Co., Inc., Plainsboro, N. J

Bovung (Dehydrated Cow Manure)

Woodruff Fertilizer Works, Inc., North Haven, Conn.

Woodruff's 3-12-6 Fertilizer
Woodruff's 4-9-7 Fertilizer
Woodruff's 4-10-10 Fertilizer
Woodruff's 4-12-4 Fertilizer
Woodruff's 6-15-15 Fertilizer
Woodruff's Natural Superphosphate 18%
Woodruff's Tobacco Special Fertilizer 6-3-6 (Potash From Sulphate)
Woodruff's Victory Garden Fertilizer 3-8-7

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[1] Two per cent organic
[2] Nitrogen all organic.

INSPECTION OF 1943

Due to war demands for nitrogenous materials, the number of grades of fertilizer has been greatly reduced for the current year. A limited number of grades has been established for the various states, such "approved grades" being designed to serve the agricultural needs in the areas of use. The accepted grades for the several states are set forth by the Food Production Administration in Food Production Order 5, January 18, 1943, in a revision of that order dated July 3, 1943, and in interim supplements thereto. These orders provided certain exemptions for the distribution of stocks of unapproved grades on hand prior to certain specified dates in order to relieve manufacturers of the burden of reformulating such goods.

The grades approved for Connecticut (F.P.O 5, January 18, 1943) were: 0–14–14, 0–20–20, 0–9–27, 3–10–10, 3–12–6, 3–12–15, 4–9–7, 4–12–4, 4–10–10, 5–3–5, 6–3–6, 4–16–20, 5–20–10, and 6–15–15. An 8–4–8 grade was approved later.

In addition, the following were approved for all states:

Nitrate of soda	16–0–0
Nitrate of soda-potash	14–0–14
Sulphate of ammonia	20 (or higher)–0–0
Cyanamid	20 (or higher)–0–0
Uramon	42–0–0
Ammonium phosphate	11–48–0, 16–20–0
Superphosphate	0–18 (or higher)–0
Muriate of potash	0–0–50 (or higher)
Sulphate of potash	0–0–48 (or higher)
Manure salts	0–0–22 (or higher)
Sulphate of potash-magnesia	0–0–18 (or higher)
Basic slag	Any grade
Ground phosphate rock	Any grade
Colloidal phosphate	Any grade
Cotton hull ash	Any grade
Wood ash	Any grade
Victory garden fertilizer	3–8–7

Under F.P.O. 5, Revision of July 3, 1943, the following grades were approved for use in 1943-44: 0–14–14, 3–12–6, 4–10–0[1], 5–3–5[1,2] 5–8–7[2], 5–10–5[3], 5–10–10, 6–3–6[1] and 7–7–7.

To permit greater flexibility in the use of plant food in the materials available to manufacturers multiples of most of the above grades are permitted.

The revised list of materials approved for all states for 1943-44 is as follows:

Nitrate of soda	16–0–0
Nitrate of potash	14–0–14
Sulphate of ammonia	20 (or higher)–0–0
Cyanamid	20 (or higher)–0–0
Uramon	42–0–0
Ammoniated superphosphate	4–16–0 (or higher)

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[1] Tobacco only.

[2] No multiples permitted.

[3] Designated for use on victory gardens but not limited to such use.

Ammonium phosphate	11–48–0, 16–20–0
Uramon-limestone	20 (or higher)–0–0
Ammonium nitrate-limestone	20 (or higher)–0–0
Ammonium nitrate	30 (or higher)–0–0
Potassium nitrate	14–0–14 (or higher)
Superphosphate	0–18 (or higher)–0
Muriate of potash	0–0–50 (or higher)
Sulphate of potash	0–0–48 (or higher)
Manure salts	0–0–22 (or higher)
Sulphate of potash magnesia	0–0–18 (or higher)
Potash lime	0–0–6
Ground phosphate rock	Any grade
Colloidal phosphate	Any grade
Cotton hull ash	Any grade
Wood ash	Any grade

Nothing in the orders above cited affect state regulations as to registration, tonnage taxes or other local requirements. The Station has assumed no authority under these orders to the trade but, as a matter of cooperation, has inquired into any apparent inconsistencies that have come to our attention. So far as we can observe, the fertilizer industry has complied fully with both the letter and intent of these orders.

During the 1943 season the Station agent collected 190 samples including all the registered brands that could be found. A summary of official samples and of those submitted by purchasers is given in the following classification, which includes also tonnage data for the year July 1, 1942, to June 30, 1943. Tonnage does not include fertilizer distributed under the Federal Agricultural Conservation Program.

Classification of Fertilizer Materials and Fertilizer Tonnage
(July 1, 1942, to June 30, 1943)

	Page number	Number of samples	Tonnage	
I. *Containing Chiefly Nitrogen*				
Nitrate of soda	17	4	1,401	
Ammonium sulphate	17	4	341	
Castor pomace	18	4	1,052	
Cottonseed meal (C. M.–C. P.)	18	57	7,289	
Linseed meal	18	7	556	
Soybean meal	14	4	870	
Other materials (cyanamid, uramon)	17	3	120	
				1,629
II. *Containing Chiefly Phosphoric Acid*				
Superphosphate	19	17 (16–18%)	512	
		(20%)	3,819	
				4,331
III. *Containing Chiefly Potash*				
Muriate of potash	20	6 (50%)	92	
		(60%)	377	
Sulphate of potash and sulphate potash-magnesia	20	7	230	
Cottonhull ashes	20	18	1,195	
				1,894
IV. *Containing Nitrogen and Phosphoric Acid*				
Dry ground fish	15	7	256	
Ground bone	21	19	1,058	
Other materials (milorganite and tankage)	..[1]	2	338	
				1,652
V. *Mixed fertilizers*				
Commercial mixtures	22	121	52,857[2]	
Special and home mixtures	30	73	201	
				53,058
VI. *Miscellaneous*				
Sheep manure, etc.	33	14	716	
Lime	35	12	....	
Other materials	36	33	....	
Check meals and fertilizers	16	42	....	
				716
Totals		454		73,280

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[1] No official samples.

[2] For distribution of this tonnage see next page.

MIXED FERTILIZER TONNAGE

Grades Approved for Connecticut[1]

Grade	Tons	Grade	Tons
0–9–27	3	4–12–4	1,327
0–14–14	587	4–16–20	59
0–20–20	115	5–3–5	1,929
3–10–10	30	–20–10	0
3–12–6	2,849	6–3–6	11,237
3–12–15	0	6–15–15	1,764
4–9–7	15,058	8–4–8	526
4–10–10	9,792	3–8–7[2]	5,787
		Total	51,061

Left-Over Grades, Miscellaneous

(Over 50 Tons)

Grade	Tons	Grade	Tons
3–10–3	58	4–8–10	90
3–10–4	99	5–8–7	599
3–10–5	69	5–10–5	57
4–8–4	336	7–7–7	54
4–8–7	117	10–6–4	92
		Total	1,571

(Less Than 50 Tons)

3–8–5 3–10–2	10	6–5–3	11
3–10–6	17	6–7–4	36
4–4–0 4–8–5	9	7–3–7 7–14–21	4
4–8–8 4–10–4 4–16–4 5–5–5	7	7–6–6 7–7–5 8–5–2	12 11 16
		8–5–8 8–6–2	10
5–5–1	7	8–6–4	9
5–7–3 5–8–6	8	8–8–8 8–16–8 8–16–14 8– 6–16	4
5–8–10 5–10–4 5–15–5	10	10–5–5	5
5–10–10	20		
6–3–7 6–6–5	9	Total	225

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[1] F. P. O. 5, January 18, 1943.

[2] Victory Garden Special, all states.

I. RAW MATERIALS CHIEFLY VALUABLE FOR NITROGEN

Chemical Sources

Nitrate of soda, otherwise known as Chile saltpeter, has long been a common source of chemical nitrogen. The commercial products from natural sources are available in both the crystalline and pellet forms, and both are derived from the natural ore, caliche, obtained from Chile. Nitrate of soda is also manufactured on a large scale in the United States from synthetic ammonia and soda ash (sodium carbonate).

Sulphate of ammonia is formed when ammonia is combined with sulphuric acid. Commercially it is made by passing ammonia gas from coke ovens and gas plants into sulphuric acid.

Cyanamid and urea are other considerable sources of chemical nitrogen. Cyanamid is made by passing nitrogen gas through calcium carbide heated to high temperature. Urea is a synthetic product obtained by combining synthetic ammonia and carbon dioxide under high pressure and other suitable conditions.

For fertilizer purposes the nitrogen in both cyanamid and urea is classed as non-protein organic nitrogen, which relates it to the vegetable sources of nitrogen rather than the mineral sources such as nitrate of soda and sulphate of ammonia.

The analyses of official samples of this group of products are given in Table 1. Unofficial samples submitted by purchasers are not included.

Vegetable Sources

The ground pressed cakes of oil seeds, especially cottenseed, have long been used as sources of fertilizer nitrogen. Cottonseed meal imported for fertilizer purposes is denatured with castor pomace to make it unfit for feeding livestock and thereby to gain the advantage of lower import duties.

Analyses of official samples are given in Table 2.

II RAW MATERIALS CHIEFLY VALUABLE FOR PHOSPHORIC ACID

Superphosphate was first prepared by treating bones with sulphuric acid. This simple process was proposed by Liebig in 1840 and a little later, in 1842, Lawes applied the method to mineral phosphates.

The manufacture of superphosphate in the United States appears to have begun in Baltimore in 1850; and this date may also be said to mark the beginning of the commercial fertilizer industry in this country.

Treatment of phosphate rock with sulphuric acid converts the natural phosphate largely into water-soluble form which is readily available to plants. Superphosphate commonly contains 16 per cent of available phosphoric acid, but in recent years the proportion of available phosphoric acid has been increased by treating the rock with phosphoric acid instead of sulphuric acid.

Official samples analyzed in the past year were guaranteed at 18 or 20 per cent available phosphoric acid, as shown in Table 3.

Another source of phosphoric acid for fertilizer purposes is precipitated bone, which is a by-product in the manufacture of glue from bones. There is a limited use of the slower acting rock phosphate.

III. RAW MATERIALS CHIEFLY VALUABLE FOR POTASH

Muriate of potash, sulphate of potash and cottonhull ashes are the chief sources of potash for fertilizer purposes. Analyses of official samples are given in Table 4.

IV. MATERIAL SUPPLYING NITROGEN AND PHOSPHORIC ACID

Dry Ground Fish

Only two official samples of dry ground fish were examined, but five were analyzed for purchasers.

The official samples were as follows:

Number	Samples from stock of	Per cent nitrogen found	Per cent nitrogen guaranteed	Per cent phosphoric acid found	Per cent phosphoric acid guaranteed
7064	Apothecaries Hall, East Windsor	9.98	9.00	6.89	5.00
7056	The Rogers & Hubbard Co., Portland	10.21	9.46	8.29	5.00

The samples contained, respectively, 0.24 and 0.23 per cent of chlorine.

Ground Bone

Thirteen official samples of ground bone were analyzed, and six were analyzed for purchasers. Analyses of official samples are given in Table 5.

Other Materials

Two samples of horn and hoof meal and one of Ammo Phos were examined for purchasers. The horn and hoof meal was guaranteed 15 per cent nitrogen and samples contained 14.78 and 14.88 per cent respectively. The sample of Ammo Phos was guaranteed 11-48 and we found 11.07 nitrogen and 48.68 available phosphoric acid.

V. MIXED FERTILIZERS

Analyses of 117 official samples of mixed fertilizer are given in Table 6. The results are summarized as follows:

Total number of samples		117
Samples deficient in:		
one item	26	
two items	3	
three items	0	29
Percentage of samples meeting guaranties		75
Total guaranties made		343[1]
Guaranties not met:		
nitrogen	17	
phosphoric acid	6	
potash	9	32
Percentage of guaranties met		91

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[1] Eight samples with only two guaranties.

By the usual laboratory methods the quality of the insoluble organic nitrogen appeared to be satisfactory.

Over 90 per cent of the individual guaranties for the major elements of plant food were substantially met or exceeded. Analyses are given in Table 6.

Special and Home Mixtures

Each year a considerable number of special and home-mixed fertilizer, largely or entirely for tobacco, is analyzed for individuals. Seventy-three samples were examined during the past season. Analyses are given in Table 7.

State Purchases of Fertilizer

Raw materials and mixed goods supplied to state institutions on state purchase orders have been included in our regular inspection for several years. Such brands are subject to registration and the tonnage tax; the only exemptions are in the case of fertilizer sold to the Experiment Station for experimental purposes.

Samples of fertilizer sold on state purchase orders are indicated in the several tables of analyses. They are summarized as follows:

Number of samples	Material	Reference
1	Cyanamid	Table 1
3	Superphosphate	Table 3
11	Mixed fertilizer	Table 6

All of these substantially met or exceeded guaranties.

VI. MISCELLANEOUS

Sheep Manure. Fourteen official samples of commercial sheep and other farm manures were analyzed and the results are given in Table 8.

Agricultural Lime. Liming materials are not classed as commercial fertilizer under the fertilizer law, and hence no registration of brands is required and no regular inspection is made. Samples are examined each year for purchasers and others interested. Twelve were analyzed during the past season. The analyses are given in Table 9.

Other Miscellaneous Materials. Other samples of miscellaneous materials, 27 in number, have been examined and some of these are listed, with analyses, for reference purposes in Table 10.

Check Meals and Fertilizers. Thirty samples of cottonseed meal and 12 of fertilizers have been analyzed in the collaborative program sponsored by the American Oil Chemists Society and by the F.S. Royster Guano Co. State, commercial and industrial chemists participate in these programs, the purpose of which is to promote uniformity and accuracy in analytical control work.

TABLE 1. ANALYSES OF NITRATE OF SODA, ETC.

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
	Nitrate of Soda			
7075	Arcadian, The American. Allied Chemical & Dye Corp., New York, N. Y.	East Hartford: Olds & Whipple, Inc.	16.06	16.00
7041	Chilean, Champion Brand. Chilean Nitrate Sales Corp., New York, N. Y.	West Haven: L. T. Frisbie	16.06	16.00
	Cyanamid			
7050	20.6% "Aero" Granular. American Cyanamid Co., New York, N. Y.	Portland: The Rogers & Hubbard Co.	20.82	20.60
7347[1]	20.6% "Aero" Granular. American Cyanamid Co., New York, N. Y.	Meriden: Connecticut School for Boys	20.52	20.60
	Uramon Fertilizer Compound			
7058	E. I. du Pont de Nemours Co., Wilmington, Del.	East Windsor: Apothecaries Hall Co.	42.25	42.00
	Sulphate of Ammonia			
7341	Arcadian. Allied Chemical & Dye Corp., New York, N. Y.	East Windsor: Apothecaries Hall Co.	20.94	20.60
7060	Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	20.80	20.50
7071	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	20.68	20.56

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[1] State purchase.

TABLE 2. ANALYSES OF CASTOR POMACE, COTTONSEED MEAL, ETC.

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
	Castor Pomace			
7062	Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	6.00	4.50
7338	Spencer Kellogg & Sons, Inc., Buffalo, N. Y.	East Windsor: Apothecaries Hall Co.	5.94	4.52
7048	Hubbard. The Rogers & Hubbard Co., Portland, Conn.	Portland: The Rogers & Hubbard Co.	5.79	4.50
	Cottonseed Meal			
7078	Dixie Prime 41%. Humphreys-Godwin Co., Memphis, Tenn.	East Hartford: Olds & Whipple, Inc.	6.24	6.58
7339	"Lovit Brand". L. B. Lovitt & Co., Memphis, Tenn.	East Windsor: Apothecaries Hall Co.	6.52	6.56
	Linseed Meal			
7334	Dutch Boy 32% Old Process. National Lead Co., New York, N. Y.	Hazardville: L. B. Haas & Co.	5.50	5.00

Table 3. Analyses of Superphosphate

Station No.	Manufacturer or wholesale dealer	Dealer or purchaser	Per cent phosphoric acid			
			Citrate-insoluble	Total	"Available"	
					Found	Guaranteed
	Superphosphate					
7080	18% Normal. The American Agricultural Chemical Co., North Weymouth, Mass.	West Haven: The American Agricultural Chemical Co.	1.37	20.10	18.73	18.00
7340	20%. Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	1.20	22.42	21.22	20.00
7298	Armour's Big Crop 20%. Armour Fertilizer Works, New York, N. Y.	Norwich: Checkerboard Feed Store	1.01	21.23	20.22	20.00
7046	Baugh's 20%. The Baugh & Sons Co., Baltimore, Md.	Hamden: The Hamden Lehigh Coal Co.	0.21	20.22	20.01	20.00
7040	20%. Consolidated Rendering Co., Boston, Mass.	West Haven: L. T. Frisbie Co.	0.21	21.10	20.89	20.00
7288	Davco Granulated 20%. The Davison Chemical Corp., Baltimore, Md.	Bridgeport: Berkshire Chemical Co.	1.25	22.98	21.73	20.00
7346[1]	Davco Granulated 20%. The Davison Chemical Corp., Baltimore, Md.	Meriden: Connecticut School for Boys	0.84	22.22	21.38	20.00
7045	Eastern States 20%. Eastern States Farmers' Exchange, West Springfield, Mass.	North Haven: Eastern States Farmers' Exchange	1.01	22.13	21.12	20.00
7076	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	0.80	22.10	21.30	20.00
7313[1]	O & W. Olds & Whipple, Inc., Hartford, Conn.	Cheshire: Connecticut Reformatory	0.81	22.46	21.65	20.00
7354[1]	O & W. Olds & Whipple, Inc., Hartford, Conn.	Mansfield: Mansfield State Training School	0.95	21.90	20.95	20.00
7049	Hubbard 20%. The Rogers & Hubbard Co., Portland, Conn.	Portland: The Rogers & Hubbard Co.	0.84	20.50	19.66	20.00
7398	Swift's Red Steer Brand 20%. Swift & Co. Fertilizer Works, Baltimore, Md.	Danbury: H. E. Meeker Co.	0.47	20.08	19.61	20.00
7043	Woodruff's Natural 18%. Woodruff Fertilizer Works, Inc., North Haven, Conn.	North Haven: Woodruff Fertilizer Works, Inc.	0.15	19.90	19.75	18.00

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[1] State purchase.

TABLE 4. ANALYSES OF POTASH SALTS, ETC.

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent potash	
			Found	Guaranteed
	Muriate of Potash			
7079	50%. The American Agricultural Chemical Co., North Weymouth, Mass.	West Haven: The American Agricultural Chemical Co.	50.42	50.00
7057	60%. Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	61.26	60.00
7059	50%. Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	50.74	50.00
7299	Eastern States. Eastern States Farmers' Exchange, West Springfield, Mass.	Norwich: Eastern States Farmers' Exchange	60.28	60.00
7074	60%. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	60.94	60.00
7047	Hubbard. The Rogers & Hubbard Co., Portland, Conn.	Portland: The Rogers & Hubbard Co.	59.00	60.00
	Sulphate of Potash			
7061	Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	48.44	48.00
7333	Double. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	Hazardville: L. B. Haas & Co.	21.86	22.00
7072	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	49.04	48.00
	Cottonhull Ashes			
7065	Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	38.62	35.40
7077	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Windsor: Olds & Whipple, Inc.	31.74	30.00

TABLE 5. ANALYSES OF GROUND BONE

Station No.	Manufacturer and brand	Sampled from stock of	Per cent nitrogen		Per cent phosphoric acid		Mechanical analysis (in percentage)	
			Total found	Total guaranteed	Total found	Total guaranteed	Finer than 1/50 inch	Coarser than 1/50 inch
7193	The American Agricultural Chemical Co., North Weymouth, Mass.	West Haven: The American Agricultural Chemical Co.	2.90	2.47	24.12	23.00	53.5	46.5
7063	Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	3.50	2.25	21.98	22.00	40.8	59.2
7294	Fine Ground. The Berkshire Chemical Co., Bridgeport, Conn.	Bridgeport: Berkshire Chemical Co.	2.79	2.05	26.70	25.00	53.0	47.0
7295	Pure Raw. The Berkshire Chemical Co., Bridgeport, Conn.	Bridgeport: Berkshire Chemical Co.	3.74	3.70	21.68	20.00	31.7	68.3
7042	Corenco. Consolidated Rendering Co., Boston, Mass.	West Haven: L. T. Frisbie Co.	3.34	2.47	23.02	23.00	57.6	42.4
7044	Eastern States Steamed. Eastern States Farmers' Exchange, West Springfield, Mass.	North Haven: Eastern States Farmers' Exchange	2.29	2.30	27.65	23.00	64.0	36.0
7395	Hoffman's. A. H. Hoffman, Inc., Landisville, Pa.	Middletown: Bacon Bros.	3.85	3.70	26.91	20.00	71.6	28.4
7073	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	2.66	2.47	27.31	22.00	52.5	47.5
7051	Hubbard Strictly Pure. The Rogers & Hubbard Co., Portland, Conn.	Portland: The Rogers & Hubbard Co.	3.83	3.70	21.50	20.00	58.6	41.4
7054	Hubbard Fine Ground. The Rogers & Hubbard Co., Portland, Conn.	Portland: The Rogers & Hubbard Co.	2.31	2.47	28.66	23.00	58.8	41.2
7055	Hubbard Raw Knuckle Bone Flour. The Rogers & Hubbard Co., Portland, Conn.	Portland: The Rogers & Hubbard Co.	4.38	3.70	23.10	24.70	79.4	20.6
7350	Sawco. Stumpp & Walter Co., New York, N. Y.	Stamford: Stumpp & Walter Co.	2.29	2.47	25.81	24.00	64.6	35.4
7348	Swift & Co. Fertilizer Works, Baltimore, Md.	Greenwich: McArdle's Seed Store	2.86	2.47	25.30	23.00	61.0	39.0

TABLE 6. ANALYSES OF

Station No.	Manufacturer and brand	Place of sampling
	The Acme Guano Co., Baltimore, Md.	
7311	Acme Victory Garden 3–8–7	Middletown
7332	Acme 3–12–6	Suffield
7331	Acme 4–9–7	Suffield
7310	Acme 4–10–10	Middletown
7309	Acme 4–12–4	Middletown
	The American Agricultural Chemical Co., North Weymouth, Mass.	
7187	AA Market Garden Fertilizer 4–12–4	West Haven
7189	AA Potato and Root Crop Fertilizer 4–10–10	West Haven
7188	AA Potato and Vegetable Fertilizer 4–9–7	West Haven
7194	AA Sure Crop Fertilizer 3–12–6	West Haven
7161	Agrico Alkaline 0–14–14	West Haven
7210	Agrico for Commercial Growers 4–12–4	West Haven
7184	Agrico for Corn 3–10–6	West Haven
7159	Agrico for Corn 3–12–6	West Haven
7304	Agrico for Lawns, Trees, and Shrubs 3–10–5	East Hartford
7185	Agrico for New England 4–9–7	West Haven
7186	Agrico for Potatoes and Vegetables 4–10–10	West Haven
7190	Agrico for Seeding Down 4–16–20	West Haven
7427	Agrico for Tobacco 6–3–6	East Hartford
7183	Agrico for Truck 4–12–4	West Haven
7160	Agrico Victory Garden Fertilizer "For Food Production Only" 3–8–7	West Haven
7399	Agrico Victory Garden Fertilizer "For Food Production Only" 3–8–7	Danbury
	Apothecaries Hall Co., Waterbury, Conn.	
7151	Liberty Fertilizer 0–14–14	East Windsor
7128	Liberty Fertilizer 3–12–6	East Windsor
7129	Liberty Fertilizer 4–9–7	East Windsor
7150	Liberty Fertilizer 4–12–4	East Windsor
7416	Liberty Tobacco Mixture 5–3–5	East Windsor
7268	Liberty Tobacco Mixture 6–3–6	South Windsor
7127	Liberty Victory Fertilizer 3–8–7	East Windsor
	Armour Fertilizer Works, New York, N. Y.	
7200	Armour's Big Crop Fertilizer 3–12–6	East Windsor Hill
7199	Armour's Big Crop Fertilizer 4–9–7	East Windsor Hill
7198	Armour's Big Crop Fertilizer 4–10–10	East Windsor Hill
7201	Armour's Big Crop Fertilizer 4–12–4	East Windsor Hill
7422	Armour's Big Crop Tobacco Special 5–3–5	East Windsor Hill
7423	Armour's Big Crop Tobacco Special 6–3–6	East Windsor Hill
7202	Armour's Victory Garden Fertilizer 3–8–7	East Windsor Hill

MIXED FERTILIZERS

Per cent nitrogen					Per cent phosphoric acid			Per cent potash		
In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total	Station No.
1.43	0.62	0.62	0.36	3.03	0.81	9.99	9.18	7.32	7.32	7311
0.07	2.60	0.28	0.55	3.50	0.35	13.14	12.79	3.52	6.05	7332
0.00	3.92	0.13	0.27	4.32	0.50	9.69	9.19	6.14	7.69	7331
3.65	0.16	0.09	0.11	4.01	0.20	11.01	10.81	8.22	8.22	7310
1.78	0.90	0.78	0.25	3.71	0.78	13.16	12.38	2.72	4.07	7309
0.24	3.70	....	0.19	4.13	0.77	13.25	12.48	4.29	4.29	7187
0.49	3.44	0.24	0.11	4.28	1.09	11.56	10.47	10.08	10.08	7189
0.59	3.24	....	0.15	3.98	0.75	10.28	9.53	7.19	7.19	7188
0.10	2.72	0.12	0.16	3.10	0.52	13.26	12.74	6.28	6.28	7194
....	....	....	....	....	1.06	15.06	14.00	13.09	14.09	7161
0.00	2.68	0.14	1.34	4.16	0.91	13.55	12.64	4.11	4.11	7210
0.48	0.68	0.88	1.07	3.11	1.09	11.86	10.77	0.66	6.14	7184
0.37	2.24	0.24	0.22	3.07	1.45	13.40	11.95	5.93	5.93	7159
0.00	0.31	0.00	2.68	2.99	0.60	11.88	11.28	5.00	5.00	7304
0.64	3.08	0.02	0.12	3.86	0.76	10.00	9.24	7.05	7.05	7185
0.10	3.54	0.26	0.13	4.03	1.44	11.41	9.97	10.40	10.40	7186
0.88	2.74	0.32	0.11	4.05	0.41	16.31	15.90	20.12	20.12	7190
0.61	1.22	0.62	3.43	5.88	0.36	3.90	3.54	0.72	6.05	7427
0.51	3.40	0.04	0.21	4.16	0.69	12.92	12.23	4.08	4.08	7183
0.14	2.22	0.10	0.06	2.52	0.90	9.06	8.16	6.59	6.59	7160
1.00	1.84	0.16	0.04	3.04	0.71	9.45	8.74	7.08	7.08	7399
....	....	....	....	....	0.31	14.34	14.03	14.36	14.36	7151
0.00	2.18	0.47	0.72	3.37	0.34	12.58	12.24	6.26	6.26	7128
0.68	2.84	0.18	0.58	4.28	0.20	9.70	9.50	7.38	7.38	7129
0.00	2.88	0.61	0.90	4.39	0.32	12.43	12.11	4.65	4.65	7150
2.34	0.08	0.60	2.24	5.26	0.05	4.24	4.19	0.48	6.26	7416
....	....	....	....	6.10	0.14	5.37	5.23	0.36	6.76	7268
0.00	1.44	0.34	1.50	3.28	0.61	9.30	8.69	7.44	7.44	7127
0.56	2.02	0.10	0.39	3.07	0.75	13.31	12.56	6.13	6.13	7200
0.29	2.88	0.26	0.41	3.84	0.65	9.65	9.00	7.72	7.72	7199
0.36	2.92	0.26	0.41	3.95	0.59	10.80	10.21	9.88	9.88	7198
1.03	2.14	0.30	0.42	3.89	0.60	12.94	12.34	4.16	4.16	7201
1.20	0.26	1.42	2.16	5.04	0.11	3.81	3.70	0.72	4.86	7422
0.91	0.20	1.76	2.87	5.74	0.15	3.70	3.55	0.88	6.82	7423
0.00	2.52	0.53	0.35	3.40	0.67	9.44	8.77	7.65	7.65	7202

TABLE 6. ANALYSES OF

Station No.	Manufacturer and brand	Place of sampling
	Associated Seed Growers, Inc., New Haven, Conn.	
7095	Clark's Tip Top Brand Fertilizer 4–9–7	North Haven
	The Baugh & Sons Co., Baltimore, Md.	
7111	Baugh's 3–10–10	Hamden
7110	Baugh's 4–9–7	Hamden
7107	Baugh's 4–10–10	Hamden
7109	Baugh's Perfection Brand 3–12–6	Hamden
7108	Baugh's Victory Garden for Food Production Fertilizer 3–8–7	Hamden
	The Berkshire Chemical Co., Bridgeport, Conn.	
7291	Berkshire 0–14–14 Fertilizer	Bridgeport
7292	Berkshire Victory Garden 3–8–7	Bridgeport
7297	Berkshire 3–12–6 Fertilizer	Bridgeport
7365[1]	Berkshire 3–12–6 Fertilizer	Southbury
7293	Berkshire 4–9–7 Fertilizer	Bridgeport
7364[1]	Berkshire 4–9–7 Fertilizer	Newtown
7424[1]	Berkshire 4–10–10 Fertilizer	Somers
7290	Berkshire 4–10–10 Fertilizer	Bridgeport
7289	Berkshire 4–12–4 Fertilizer	Bridgeport
7394	Berkshire 6–3–6 Fertilizer	Bridgeport
	The Consolidated Rendering Co., Boston, Mass.	
7209	Corenco 3–8–7 Victory Garden Fertilizer	Bethel
7336	Corenco 3–10–3 Landscape	New Haven
7088	Corenco 3–12–6 Animal Brand	West Haven
7081	Corenco 4–9–7 General Crop Manure	West Haven
7082	Corenco 4–10–10 Potato Grower	West Haven
7089	Corenco 4–12–4 Complete Manure	West Haven
7372	Corenco 6–3–6 Special Tobacco Grower	West Suffield
	Eastern States Farmers' Exchange West Springfield, Mass.	
7206	Eastern States Fertilizer 0–14–14	Bethel
7097	Eastern States 3–8–7	North Haven
7205	Eastern States Fertilizer 3–12–6	Bethel
7208	Eastern States 4–10–10	Bethel
7207	Eastern States 6–15–15	Bethel

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[1] State purchase.

Mixed Fertilizers—(*Continued*)

Per cent nitrogen					Per cent phosphoric acid			Per cent potash		
In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total	Station No.
0.41	2.60	0.40	0.61	4.02	0.34	9.34	9.00	6.78	6.78	**7095**
0.22	2.44	0.28	0.15	3.09	0.64	10.89	10.25	10.14	10.14	**7111**
0.52	3.20	0.14	0.16	4.02	0.53	9.82	9.29	7.40	7.40	**7110**
0.45	3.06	0.22	0.22	3.95	0.37	10.40	10.03	10.02	10.02	**7107**
0.00	2.42	0.45	0.21	3.08	0.64	12.70	12.06	6.07	6.07	**7109**
0.45	2.42	0.26	0.15	3.28	0.59	8.79	8.20	7.21	7.21	**7108**
....	....	....	....	....	0.68	15.70	15.02	11.50	14.03	**7291**
0.00	3.00	0.00	0.19	3.19	0.13	8.63	8.50	7.67	7.67	**7292**
0.40	2.28	0.12	0.19	2.99	0.36	12.66	12.30	6.07	6.07	**7297**
0.58	2.28	0.12	0.20	3.18	0.40	12.70	12.30	5.99	5.99	**7365**
0.47	3.06	0.10	0.21	3.84	0.43	9.99	9.56	7.02	7.02	**7293**
0.67	2.96	0.00	0.23	3.86	0.36	9.26	8.90	6.49	7.01	**7364**
0.79	2.98	0.02	0.21	4.00	0.56	10.40	9.84	10.08	10.08	**7424**
0.59	3.22	0.10	0.15	4.06	0.48	10.84	10.36	10.23	10.23	**7290**
0.27	2.88	0.84	0.19	4.18	0.68	13.42	12.74	4.14	4.14	**7289**
0.62	0.20	1.32	3.44	5.58	0.63	4.96	4.36	0.51	5.84	**7394**
0.86	0.90	0.54	0.70	3.00	0.45	8.86	8.41	7.00	7.00	**7209**
0.00	0.18	0.23	3.12	3.53	0.61	10.69	10.08	2.60	2.60	**7336**
0.96	1.64	0.42	0.12	3.14	0.15	12.47	12.32	6.01	6.01	**7088**
1.02	2.68	0.44	0.02	4.16	0.35	9.70	9.35	7.07	7.07	**7081**
1.04	2.56	0.44	0.04	4.08	0.44	10.68	10.24	9.54	9.54	**7082**
0.96	2.68	0.38	0.10	4.12	0.40	12.47	12.07	4.45	4.45	**7089**
0.55	0.24	2.22	2.83	5.84	0.49	4.91	4.42	0.56	6.05	**7372**
....	....	....	....	....	0.21	15.86	15.65	14.57	14.57	**7206**
0.29	2.52	0.16	0.19	3.16	0.50	8.96	8.46	7.88	7.88	**7097**
0.49	2.08	0.26	0.22	3.05	0.74	12.94	12.20	6.48	6.48	**7205**
1.43	2.30	0.14	0.16	4.03	0.16	10.99	10.83	10.57	10.57	**7208**
0.67	5.00	0.18	0.12	5.97	0.35	16.09	15.74	15.59	15.59	**7207**

TABLE 6. ANALYSES OF

Station No.	Manufacturer and brand	Place of sampling
	Goulard & Olena, Inc., New York, N. Y.	
7337	G & O Lawn and Garden Fertilizer 4–12–4	New Haven
	Mechling Products Division, General Chemical Co., Camden, N. J.	
7308	Veget-Aid 5–10–5	Willimantic
	Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	
7373	Old Deerfield 4–9–7	West Suffield
7426	Old Deerfield 6–3–6	Somers
	Olds & Whipple, Inc., Hartford, Conn.	
7158	O & W 0–14–14 Fertilizer	East Hartford
7306	O & W 0–20–20 Fertilizer	East Hartford
7315[1]	O & W 0–20–20 Fertilizer	Cheshire
7353[1]	O & W 0–20–20 Fertilizer	Mansfield
7152	O & W 3–8–7 Victory Garden Fertilizer	East Hartford
7153	O & W 3–12–6 Corn Fertilizer	East Hartford
7156	O & W 4–9–7 General Purpose Fertilizer	East Hartford
7314[1]	O & W 4–9–7 General Purpose Fertilizer	Cheshire
7154	O & W 4–9–7 General Purpose Fertilizer with Sulphate of Potash	East Hartford
7155	O & W 4–10–10 Potato Fertilizer	East Hartford
7312[1]	O & W 4–10–10 Potato Fertilizer	Cheshire
7345[1]	O & W 4–10–10 Potato Fertilizer	Middletown
7305	O & W 4–10–10 Potato Fertilizer with Sulphate of Potash	East Hartford
7157	O & W 4–12–4 Market Garden Fertilizer	East Hartford
7371	O & W 5–3–5 Complete Tobacco Fertilizer	East Hartford
7370	O & W Complete Tobacco Fertilizer 5–3–5 (Potash Derived From Cotton Hull Ashes.)	East Hartford
7369	O & W Blue Label 6–3–6 Tobacco Fertilizer	East Hartford
7368	O & W 6–3–6 Blue Label Tobacco Fertilizer (Potash Derived From Cotton Hull Ashes)	East Hartford
7352[1]	O & W 6–15–15 Fertilizer	Mansfield
	The Rogers & Hubbard Co., Portland, Conn.	
7123	Gro-Fast Plant Food 4–8–4	Portland
7117	Hubbard All Soils Fertilizer 4–12–4	Portland
7119	Hubbard Corn and Grain Fertilizer 3–12–6	Portland
7116	Hubbard High Potash Fertilizer 4–10–10	Portland

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[1] State purchase.

Mixed Fertilizers—(*Continued*)

Per cent nitrogen					Per cent phosphoric acid			Per cent potash		
In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total	Station No.
0.23	0.32	0.48	2.78	3.81	1.15	13.05	11.90	5.50	5.50	7337
0.00	3.72	0.56	0.97	5.25	1.27	12.78	11.51	5.85	5.85	7308
0.58	2.16	0.62	0.78	4.14	0.45	9.56	9.11	7.15	7.15	7373
1.09	0.34	1.30	3.29	6.02	0.50	4.95	4.45	0.78	6.69	7426
....	....	....	....	....	0.45	14.45	14.00	14.87	14.87	7158
....	....	....	....	....	0.41	21.71	21.30	21.21	21.21	7306
....	....	....	....	....	0.43	21.67	21.24	20.82	20.82	7315
....	....	....	....	....	0.46	20.46	20.00	22.12	22.12	7353
0.00	2.24	0.31	0.69	3.24	0.58	9.16	8.58	7.37	7.37	7152
0.00	2.40	0.22	0.68	3.30	0.47	12.22	11.75	6.31	7.02	7153
0.03	2.52	0.52	0.67	3.74	1.00	10.20	9.20	8.08	8.08	7156
0.00	2.96	0.41	0.66	4.03	0.70	10.23	9.53	7.71	7.71	7314
0.00	3.08	0.47	0.70	4.25	0.78	10.14	9.36	2.99	8.60	7154
0.30	3.32	0.08	0.61	4.31	0.36	10.39	10.03	10.84	10.84	7155
0.61	2.20	0.44	0.61	3.86	0.59	10.67	10.08	10.82	11.90	7312
0.43	3.04	0.06	0.63	4.16	0.42	10.19	9.77	11.47	11.47	7345
0.67	1.72	0.82	0.71	3.92	0.66	11.49	10.83	1.50	10.17	7305
0.00	3.32	0.31	0.58	4.21	0.31	12.70	12.39	4.65	4.65	7157
0.57	0.12	1.26	3.13	5.08	0.31	4.09	3.78	0.60	5.54	7371
0.72	0.36	0.96	2.96	5.00	0.28	4.24	3.96	0.53	5.77	7370
1.14	0.16	1.30	3.43	6.03	0.22	3.80	3.58	0.74	6.69	7369
1.39	0.18	1.40	3.21	6.18	0.22	4.54	4.32	0.51	7.05	7368
0.17	2.54	3.26	0.07	6.04	0.40	16.41	16.01	14.46	14.46	7352
0.09	0.12	0.40	3.75	4.36	0.17	8.50	8.33	5.27	5.27	7123
0.00	2.64	0.52	1.13	4.29	0.41	12.91	12.50	4.63	4.63	7117
0.66	1.66	0.40	0.74	3.46	0.42	12.56	12.14	6.51	6.51	7119
0.54	1.92	0.58	1.04	4.08	1.05	11.03	9.98	10.56	10.56	7116

TABLE 6. ANALYSES OF

Station No.	Manufacturer and brand	Place of sampling
7114	Hubbard Potato Fertilizer 4–9–7	Portland
7124	Hubbard Tobacco Grower 6–3–6	Portland
7118	Red H Brand 3–12–6	Portland
7366[1]	Red H Brand 3–12–6	Niantic
7121	Red H Brand 4-9–7	Portland
7344[1]	Red H Brand 4–9–7	Middletown
7120	Red H Brand 4–10–10	Portland
7425[1]	Red H Brand 4–10–10	Somers
7122	Red H Brand 4–12–4	Portland
7115	Victory Garden Fertilizer 3–8–7	Portland
	O. M. Scott & Sons, Marysville, Ohio	
7126	Scott's Turf Builder 6–8–4	Yalesville
7125	Scott's Victory Garden Fertilizer 3–8–7	Yalesville
	Stumpp & Walter Co., New York, N. Y.	
7400	Sawco Emerald Grass Fertilizer 3–10–2	Stamford
7349	Victory Garden Fertilizer 3–8–7	Stamford
	Swift & Co. Fertilizer Works, Baltimore, Md.	
7335	Vigoro 3–8–7	New Haven
7417	Vigoro 3–12–6	Rowayton
7418	Vigoro 4–12–4	Rowayton
	Tennessee Corp., Lockland, Ohio	
7421	Victory Garden Fertilizer 3–8–7	South Norwalk
	I. P. Thomas & Son Co , Camden, N. J.	
7099	I.P.Thomas 4–9–7	North Haven
7098	Soil-Rich Victory Garden Fertilizer 3–8–7 (For Food Production Only)	North Haven
7106	Tip Top Fertilizer 3–12–6	North Haven
	Woodruff Fertilizer Works, Inc. North Haven Conn.	
7343	Woodruff's 3–12–6 Fertilizer	North Haven
7091	Woodruff's 4–9–7 Fertilizer	North Haven
7096	Woodruff's 4–10–10 Fertilizer	North Haven
7094	Woodruff's 4–12–4 Fertilizer	North Haven
7093	Woodruff's 6–15–15 Fertilizer	North Haven
7092	Woodruff's Victory Garden Fertilizer 3–8–7	North Haven

State purchase.

MIXED FERTILIZERS—(*Concluded*)

Per cent nitrogen					Per cent phosphoric acid			Per cent potash		
In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total	Station No.
0.61	1.96	0.56	1.13	4.26	0.90	10.05	9.15	7.60	7.60	7114
0.61	0.18	1.18	3.98	5.95	0.18	4.36	4.18	0.72	7.09	7124
0.27	1.90	0.82	0.45	3.44	0.38	12.52	12.14	6.67	6.67	7118
0.61	2.42	0.08	0.48	3.59	0.43	12.85	12.42	5.81	5.81	7366
0.40	2.76	0.58	0.50	4.24	0.11	9.36	9.25	7.40	7.40	7121
1.67	2.20	0.26	0.43	4.56	0.11	9.51	9.40	7.50	7.50	7344
0.72	2.70	0.30	0.51	4.23	0.31	10.79	10.48	10.02	10.02	7120
0.77	3.06	0.08	0.54	4.45	0.11	10.42	10.31	10.32	10.32	7425
0.67	2.56	0.50	0.60	4.33	0.34	12.65	12.31	4.33	4.92	7122
0.00	1.60	0.58	1.14	3.32	0.16	8.77	8.61	6.75	6.75	7115
0.00	0.02	0.47	5.25	5.74	0.60	8.60	8.00	1.29	3.66	7126
0.11	1.50	0.20	1.58	3.39	0.24	8.24	8.00	7.43	7.43	7125
0.00	0.24	0.51	2.03	2.76	0.79	11.94	11.15	2.35	2.35	7400
0.24	2.06	0.30	0.90	3.50	0.78	9.71	8.93	9.94	9.94	7349
0.11	2.60	0.00	0.29	3.00	0.40	8.83	8.43	7.35	7.35	7335
0.28	2.80	0.04	0.18	3.30	0.31	12.31	12.00	6.10	6.10	7417
0.25	3.44	0.08	0.26	4.03	0.30	12.45	12.15	4.32	4.32	7418
0.00	2.40	0.32	0.26	2.98	0.19	8.86	8.67	6.81	6.81	7421
0.23	3.14	0.46	0.36	4.19	0.80	10.06	9.26	7.34	7.34	7099
0.21	1.18	0.54	1.31	3.24	0.70	8.79	8.09	7.02	7.02	7098
0.25	2.68	0.32	0.36	3.61	0.86	11.99	11.13	6.76	6.76	7106
0.00	2.08	0.22	0.54	2.84	0.29	12.05	11.76	6.03	6.03	7343
0.32	2.72	0.44	0.58	4.06	0.36	9.55	9.19	6.32	6.32	7091
0.00	2.94	0.38	0.68	4.00	0.51	10.18	9.67	0.93	10.64	7096
0.00	3.06	0.42	0.67	4.15	0.36	12.41	12.05	4.02	4.02	7094
0.17	1.56	4.20	0.16	6.09	0.24	14.90	14.66	15.09	15.09	7093
0.21	0.00	2.60	0.14	2.95	0.20	8.22	8.02	7.41	7.41	7092

TABLE 7. ANALYSES OF SPECIAL AND HOME MIXTURES

Station No.	Name of mixture	Sampled or submitted by	Total nitrogen percentage	Per cent phosphoric acid			Per cent potash			Station No.
				Citrate-insoluble	Total	So-called "available"	As muriate	Total	Chlorine	
5180	Formula A, Block 7, 1943	Bloomfield: American Sumatra Tobacco Co.	5.79	0.33	4.06	3.73	....	6.59	....	5180
6595	1943 Formula B, Hu	Hartford: Consolidated Cigar Corp.	5.61	0.44	4.65	4.21	0.16	7.82	0.12	6595
6594	1943 Formula A, Hu	Hartford: Consolidated Cigar Corp.	5.14	0.46	4.73	4.27	0.31	10.74	0.23	6594
6596	1943 Formula A, Dee	Hartford: Consolidated Cigar Corp.	5.03	0.36	4.45	4.09	0.32	10.40	0.24	6596
6597	1943 Formula B, Dee	Hartford: Consolidated Cigar Corp.	5.50	0.34	4.43	4.09	0.28	8.14	0.21	6597
6697	1943 Formula B, M	Hartford: Consolidated Cigar Corp.	5.60	0.10	2.19	2.09	0.55	9.43	0.42	6697
6835	1943 Formula B, P	Hartford: Consolidated Cigar Corp.	5.48	0.21	4.65	4.44	....	8.35	0.14	6835
6836	1943 Formula A, P	Hartford: Consolidated Cigar Corp.	5.11	0.30	4.29	3.99	....	10.04	0.21	6836
6848	1943 Formula B, M	Hartford: Consolidated Cigar Corp.	4.97	0.26	3.82	3.56	....	9.02	0.53	6848
6638	Lot 4–2–43	Simsbury: Cullman Bros. Inc.	5.97	0.19	4.23	4.04	0.40	6.02	0.30	6638
6639	Lot 4–2–43–X	Simsbury: Cullman Bros. Inc.	5.68	0.41	5.25	4.84	0.36	5.81	0.27	6639
6824	Formula 5–2–43	Simsbury: Cullman Bros. Inc.	5.06	0.51	3.99	3.48	0.29	4.10	0.22	6824
6825	Formula 5–1–43	Simsbury: Cullman Bros. Inc.	5.04	0.42	3.76	3.34	0.57	5.18	0.43	6825
6826	Formula 4–8–43	Simsbury: Cullman Bros. Inc.	4.08	0.63	4.33	3.70	0.64	7.06	0.48	6826
6827	Formula 4–7–43	Simsbury: Cullman Bros. Inc.	5.62	0.52	4.52	4.00	0.44	6.25	0.33	6827
6828	Formula 4–3–43	Simsbury: Cullman Bros. Inc.	5.48	0.40	4.92	4.52	0.45	6.25	0.34	6828
6829	Formula 4–4–43	Simsbury: Cullman Bros. Inc.	5.60	0.41	4.46	4.05	0.53	6.59	0.40	6829
6830	Formula 4–5–43	Simsbury: Cullman Bros. Inc.	5.78	0.40	4.28	3.88	0.47	6.66	0.35	6830
6831	Formula 4–6–43	Simsbury: Cullman Bros. Inc.	5.47	0.47	4.81	4.34	0.45	5.81	0.34	6831

6850	Formula 5–5–43	Simsbury: Cullman Bros. Inc.	4.39	0.44	3.77	3.33	....	6.05	0.44	**6850**
6851	Formula 5–6–43	Simsbury: Cullman Bros. Inc.	4.53	0.39	3.56	3.17	....	5.01	0.30	**6851**
6852	Formula 5–7–43	Simsbury: Cullman Bros. Inc.	4.67	0.41	3.65	3.24	....	5.16	0.36	**6852**
6853	Formula 5–8–43	Simsbury: Cullman Bros. Inc.	4.53	0.55	4.31	3.76	....	5.25	0.36	**6853**
6854	Formula 5–3–43	Simsbury: Cullman Bros. Inc.	4.66	0.37	3.68	3.31	....	4.91	0.34	**6854**
6855	Formula 5–4–43	Simsbury: Cullman Bros. Inc.	4.71	0.35	3.68	3.33	....	5.70	0.39	**6855**
6856	Formula 3–S–3–43	Simsbury: Cullman Bros. Inc.	5.00	0.41	3.77	3.36	....	5.95	0.38	**6856**
6857	Formula 3–C–13–43	Simsbury: Cullman Bros. Inc.	4.44	0.20	4.59	4.39	....	5.15	0.31	**6857**
6858	Formula 3 S–1–2–43	Simsbury: Cullman Bros. Inc.	5.08	0.45	3.79	3.34	....	4.65	0.39	**6858**
6866	Formula 3–B–43	Simsbury: Cullman Bros. Inc.	4.97	0.20	4.75	4.55	....	4.57	0.24	**6866**
6867	Formula 3–H–1–43	Simsbury: Cullman Bros. Inc.	5.12	0.15	5.05	4.90	....	4.14	0.31	**6867**
6868	Formula 3–H–2–43	Simsbury: Cullman Bros. Inc.	5.13	0.50	4.55	4.05	....	5.45	0.35	**6868**
6874	Formula 3–Z–43	Simsbury: Cullman Bros. Inc.	4.72	0.23	6.00	5.77	0.51	4.30	0.38	**6874**
6875	Formula 3–11–43	Simsbury: Cullman Bros. Inc.	5.25	0.16	5.10	4.94	0.40	4.86	0.30	**6875**
6876	Formula 3–H–3–43	Simsbury: Cullman Bros. Inc.	4.13	0.51	4.14	3.63	0.39	4.50	0.29	**6876**
6900	Formula 2–H–1A–43	Simsbury: Cullman Bros. Inc.	4.52	0.15	6.31	6.16	0.39	4.16	0.29	**6900**
6901	Formula 2–K–1–43	Simsbury: Cullman Bros. Inc.	5.14	0.17	5.02	4.85	0.41	4.82	0.31	**6901**
6902	Formula 2–K–2–43	Simsbury: Cullman Bros. Inc.	5.35	0.15	4.98	4.83	0.45	5.13	0.34	**6902**
6903	Formula 2–K–5–43	Simsbury: Cullman Bros. Inc.	5.16	0.20	4.71	4.51	0.40	5.12	0.30	**6903**
6904	Formula 2–H–3–43	Simsbury: Cullman Bros. Inc.	3.98	0.80	8.36	7.56	0.52	4.62	0.39	**6904**
6921	Formula 2–N-2–43	Simsbury: Cullman Bros. Inc.	4.74	0.30	4.95	4.65	0.61	4.89	0.44	**6921**
6922	Formula 2–H–2–43	Simsbury: Cullman Bros. Inc.	4.59	0.20	5.56	5.36	0.44	4.84	0.33	**6922**
6923	Formula 2–L&B–43	Simsbury: Cullman Bros. Inc.	4.40	0.21	5.64	5.43	0.52	4.82	0.39	**6923**
6924	Formula 2–H–1–43	Simsbury: Cullman Bros. Inc.	4.68	0.22	4.50	4.28	0.47	6.05	0.35	**6924**
6925	Formula 2–N–3–43	Simsbury: Cullman Bros. Inc.	4.66	0.24	6.25	6.01	0.47	4.79	0.35	**6925**
6992	Formula 1–A–5–43	Simsbury: Cullman Bros. Inc.	4.84	0.21	4.80	4.59	0.60	5.99	0.45	**6992**
6993	Formula 1–A–6–43	Simsbury: Cullman Bros. Inc.	4.96	0.19	4.86	4.67	0.56	5.23	0.42	**6993**
6994	Formula 1–M–L–3–P–43	Simsbury: Cullman Bros. Inc.	2.58	0.05	1.33	1.28	0.37	3.86	0.28	**6994**
6995	Formula 1–A–7–43	Simsbury: Cullman Bros. Inc.	4.92	0.11	4.90	4.79	0.37	5.17	0.28	**6995**
6996	Formula 1–A–8–43	Simsbury: Cullman Bros. Inc.	4.84	0.48	3.75	3.27	0.37	5.34	0.28	**6996**
6997	Formula 2–K–6–P–43	Simsbury: Cullman Bros. Inc.	2.63	2.52	7.69	5.17	0.05	0.76	0.04	**6997**
6998	Formula 2–L–2–P–43	Simsbury: Cullman Bros. Inc.	3.18	0.06	1.43	1.37	0.05	1.12	0.04	**6998**
6999	Formula 2–L–1–P–43	Simsbury: Cullman Bros. Inc.	2.45	0.03	0.91	0.88	0.01	0.72	0.01	**6999**
7000	Formula 2–S–P–43	Simsbury: Cullman Bros. Inc.	2.09	0.58	1.40	0.82	0.04	0.59	0.03	**7000**
7001	Formula 1–Sko–P–43	Simsbury: Cullman Bros. Inc.	2.70	0.04	1.67	1.63	0.68	6.68	0.51	**7001**
7002	Formula 1–Sch–P–43	Simsbury: Cullman Bros. Inc.	1.96	0.08	0.68	0.60	0.04	0.54	0.03	**7002**
7003	Formula 1–McC–P–P–43	Simsbury: Cullman Bros. Inc.	2.47	0.72	0.76	0.04	0.05	0.92	0.04	**7003**
7004	Formula 1–McC–2–P–43	Simsbury: Cullman Bros. Inc.	3.00	0.06	1.14	1.08	0.21	2.18	0.16	**7004**
7005	Formula 1–M–4–P–43	Simsbury: Cullman Bros. Inc.	2.00	0.10	1.16	1.06	0.73	7.48	0.55	**7005**

TABLE 7. ANALYSES OF SPECIAL AND HOME MIXTURES—(*Concluded*)

Station No.	Name of mixture	Sampled or submitted by	Total nitrogen percentage	Per cent phosphoric acid			Per cent potash			Station No.
				Citrate-insoluble	Total	So-called "available"	As muriate	Total	Chlorine	
7006	Formula 1–McC–1–P-43	Simsbury: Cullman Bros. Inc.	2.17	0.10	0.70	0.60	0.09	0.78	0.07	7006
7013	Formula 1–A-1–43	Simsbury: Cullman Bros. Inc.	4.91	0.27	4.94	4.67	0.41	5.26	0.31	7013
7014	Formula 1–A–2–43	Simsbury: Cullman Bros. Inc.	4.96	0.33	4.72	4.39	0.45	5.93	0.34	7014
7015	Formula 1–A–3–43	Simsbury: Cullman Bros. Inc.	4.61	0.27	6.04	5.77	0.41	4.98	0.31	7015
7016	Formula 1–A–4-43	Simsbury: Cullman Bros. Inc.	5.09	0.78	4.97	4.19	0.40	5.91	0.30	7016
7032	Formula 1–B–1–43	Simsbury: Cullman Bros. Inc.	4.00	0.15	6.11	5.96	0.56	6.29	0.42	7032
7033	Formula 1–B–3–43	Simsbury: Cullman Bros. Inc.	4.36	0.19	6.15	5.96	0.57	5.09	0.43	7033
7034	Formula 1–StJ–1–43	Simsbury: Cullman Bros. Inc.	4.50	0.20	6.10	5.90	0.39	5.07	0.29	7034
7141	Formula 1–McCull–1–43	Simsbury: Cullman Bros. Inc.	4.46	0.21	4.82	4.61	0.62	6.04	0.47	7141
7142	Formula 1–B–4–43	Simsbury: Cullman Bros. Inc.	4.37	0.27	6.75	6.48	0.51	5.64	0.38	7142
7143	Formula 1–S–H–43	Simsbury: Cullman Bros. Inc.	4.56	0.23	5.80	5.57	0.62	6.34	0.47	7143
7144	Formula 1–M–2–43	Simsbury: Cullman Bros. Inc.	4.60	0.23	5.40	5.17	0.56	5.12	0.42	7144
7018	Home Mixture	Hartford: L. B. Haas & Co.	4.11	0.77	5.30	4.53	0.77	10.61	0.58	7018
6699	Home Mixture	Hartford: B. Rapaport & Sons	5.74	0.35	4.86	4.51	0.40	5.13	0.30	6699
5419	Tobacco Mixture-W.C.	Windsor: Dr. T. R. Swanback	5.25	0.14	3.88	3.74	....	7.66	0.38	5419

TABLE 8. ANALYSES OF SHEEP MANURE, ETC.

Station No.	Name of mixture	Sampled or submitted by	Per cent nitrogen		Per cent total phosphoric acid		Per cent potash		Station No.
			Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	
7192	Pulverized Sheep and Goat Manure. The American Agricultural Chemical Co., North Weymouth, Mass.	West Haven: The American Agricultural Chemical Co.	1.24	1.25	1.26	1.00	2.41	2.00	**7192**
7066	Sheep Manure. Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	1.37	1.00	1.42	0.50	2.91	1.00	**7066**
7307	Driconure. Atkins & Durbrow, Inc., New York, N. Y.	Willimantic: The Jordan Hardware Co.	2.53	2.00	3.81	....[1]	2.00	1.00	**7307**
7296	Sheep Manure. The Berkshire Chemical Co., Bridgeport, Conn.	Bridgeport: The Berkshire Chemical Co.	1.88	1.50	1.87	1.00	3.56	2.00	**7296**
7090	Corenco Sheep Manure. Consolidated Rendering Co., Boston, Mass.	West Haven: L. T. Frisbie Co.	2.00	1.25	1.96	1.00	3.84	2.00	**7090**
7396	Hoffman's Cow Manure. A. H. Hoffman, Inc., Landisville, Pa.	Middletown: Bacon Bros.	2.02	2.00	2.59	....[2]	2.33	2.00	**7396**
7397	Hoffman's Sheep Manure. A. H. Hoffman, Inc., Landisville, Pa.	Middletown: Bacon Bros.	2.17	1.85	1.91	....[3]	2.97	2.00	**7397**
7204	Wizard Brand Pulverized Sheep Manure. The Pulverized Manure Co., Chicago, Ill.	Danbury: H. E. Meeker Co.	2.41	2.00	1.96	....[4]	2.51	2.00	**7204**
7113	Hubbard Cow Manure. The Rogers & Hubbard Co., Portland, Conn.	Portland: The Rogers & Hubbard Co.	2.06	2.00	1.97	2.00	2.28	2.00	**7113**
7112	Hubbard Domestic Sheep Manure. The Rogers & Hubbard Co., Portland, Conn.	Portland: The Rogers & Hubbard Co.	1.87	1.50	1.41	1.00	3.24	1.50	**7112**
7419	Sawconure 2-1-1. Stumpp & Walter Co., New York, N. Y.	Stamford: Stumpp & Walter Co.	3.44	2.00	3.16	....[5]	1.61	1.00	**7419**

[1] Guaranteed "available" phosphoric acid, 1.00 per cent; found, 3.51 per cent.
[2] Guaranteed "available" phosphoric acid, 2.00 per cent; found, 2.34 per cent.
[3] Guaranteed "available" phosphoric acid, 1.00 per cent; found, 1.70 per cent.
[4] Guaranteed "available" phosphoric acid, 1.00 per cent; found, 1.72 per cent.
[5] Guaranteed "available" phosphoric acid, 1.00 per cent; found, 2.92 per cent.

TABLE 8. ANALYSES OF SHEEP MANURE, ETC.—(*Concluded*)

Station No.	Name of mixture	Sampled or submitted by	Per cent nitrogen		Per cent total phosphoric acid		Per cent potash		Station No.
			Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	
7420	Sawco Pulverized Sheep Manure. Stumpp & Walter Co., New York, N. Y.	Stamford: Stumpp & Walter Co.	1.88	2.00	1.84	1.00	3.76	2.00	**7420**
7367	Swift's Pulverized Sheep Manure. Swift & Co. Fertilizer Works, Baltimore, Md.	New London: Aben Hardware Co.	2.16	2.00	1.75	. . . .[1]	3.05	2.00	**7367**
7203	Bovung (Dehydrated Cow Manure). Walker-Gordon Laboratory Co., Inc., Plainsboro, N. J.	Danbury: H. E. Meeker Co. . .	1.81	2.00	2.96	2.00	1.88	2.00	**7203**

[1] Guaranteed "available" phosphoric acid, 1.00 per cent; found, 1.49 per cent.

TABLE 9. ANALYSES OF LIMESTONE AND SIMILAR MATERIALS

Station No.	Manufacturer and brand	Samples from stock of, or sent by	Chemical analysis				Total oxides, per cent	Mechanical analysis (in percentage)		Station No.
			Per cent lime		Per cent magnesia					
			Found	Guaranteed	Found	Guaranteed		20 mesh	100 mesh	
	The Connecticut Agstone Co., Danbury, Conn.									
6104	Ground limestone	Hartford: Agricultural Conservation Program	44.81	....	3.94	....	48.75	92.5	54.5	6104
7085	Standard ground limestone	Hartford: Agricultural Conservation Program	39.15	....	6.41	....	45.56	94.8	62.4	7085
6072	Ground limestone	Danbury: The Connecticut Agstone Co	42.10	....	3.84	....	45.94	....	....	6072
	Lee Lime Co., Lee, Mass.									
6522	Lee lime	Simsbury: Cullman Bros., Inc.	47.12	46.00	33.51	31.00	80.63	....	....	6522
	United States Gypsum Co., Falls Village, Conn.									
6336	Ground limestone	Falls Village: U.S. Gypsum Co.	29.58	....	20.26	....	49.84	100.0	39.7	6336
7391	Ground limestone	Hartford: Agricultural Conservation Program	30.43	....	20.36	....	50.79	100.0	....	7391
7392	Ground limestone	Hartford: Agricultural Conservation Program	30.16	....	20.77	....	50.93	99.8	....	7392
	Manufacturer Unknown									
6705	Ground limestone	Hartford: Agricultural Conservation Program	40.01	....	5.90	....	45.91	94.5	63.7	6705
6348	Land Plaster-Car N. H. 70871	Simsbury: Cullman Bros. Inc.	34.10	....	0.13	....	34.23	....	....	6348
6349	Land Plaster-Car Can. Pac. 227490.	Simsbury: Cullman Bros. Inc.	33.54	....	0.16	....	33.70	....	....	6349
6642	Agricultural hydrated lime	Simsbury: Cullman Bros. Inc.	71.55	....	1.29	....	72.84	....	....	6642
7019	Lime	East Hampton: Hyman Gutterman	26.11	....	18.00	....	44.11	....	....	7019

TABLE 10. ANALYSES OF MISCELLANEOUS MATERIALS

Station No.	Material	Per cent moisture	Per cent ash	Per cent organic and volatile	Per cent nitrogen	Per cent phosphoric acid (P_2O_5)	Per cent potash (K_2O)	Remarks
6841	Tobacco waste.....	air-dry	....	....	3.76	0.69	4.58	Nicotine 1.20%
6840	Tobacco stems.....	air-dry	....	....	2.63	0.55	6.41	
6791	Tobacco stems.....	air-dry	....	....	1.36	0.65	5.78	
7027	Garden soil........	air-dry	....	....	....	....	....	Contained 130 p.p.m. lead arsenate—39 lbs. per 1 in. acre (450 lbs. per 1 in. acre not regarded as dangerous for growing vegetables).
7029	Garden soil........	air-dry	....	....	....	....	....	Contained 82 p.p.m. lead arsenate—25 lbs. per 1 in. acre.
7145	Incinerator ashes...	air-dry	....	....	....	2.31	4.67	
7146	Humin............	42.40	10.13	47.47	3.47	0.42	trace	Said to be a by-product of vegetable protein hydrolysis in the manufacture of a food condiment or seasoning. Salt, 8.03 %. Active insoluble organic nitrogen, alkaline method 35%, neutral method 72%.
7147	Humin............	40.80	9.52	49.68	3.55	0.36	trace	Same as above. Salt 7.76%. Active insoluble organic nitrogen, alkaline, 31%, neutral 72%.
6899	Food by-product...	33.60	16.12	50.28	4.04	0.66	0.05	Salt 12.38%. Probably same as above.
6878	Food by-product...	air-dry	....	....	6.26	0.60	....	Salt 11.58%. Probably same as above.
7264	Starfish..........	air-dry	....	....	5.00	....	....	See Conn. Agr. Expt. Sta. Bul. **417**, 1938, for complete analysis.
7362	Charred bone......	air-dry	....	....	1.03	36.91	....	Bone used in heat treatment in manufacturing process.
7437	Spent magnesium flux	air-dry	....	....	....	....	20.14	Calcium oxide 7.54%, magnesium oxide 5.29%, barium oxide 3.60%. Potash is equivalent to 32.2% muriate of potash.
4977	Gypsum...........	air-dry	....	....	....	....	....	Calcium oxide 33.07%, magnesium oxide 0.28%.
4972	Magnesium sulphate	air-dry	....	....	....	....	....	Calcium oxide 4.00%, magnesium oxide 22.52%.

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